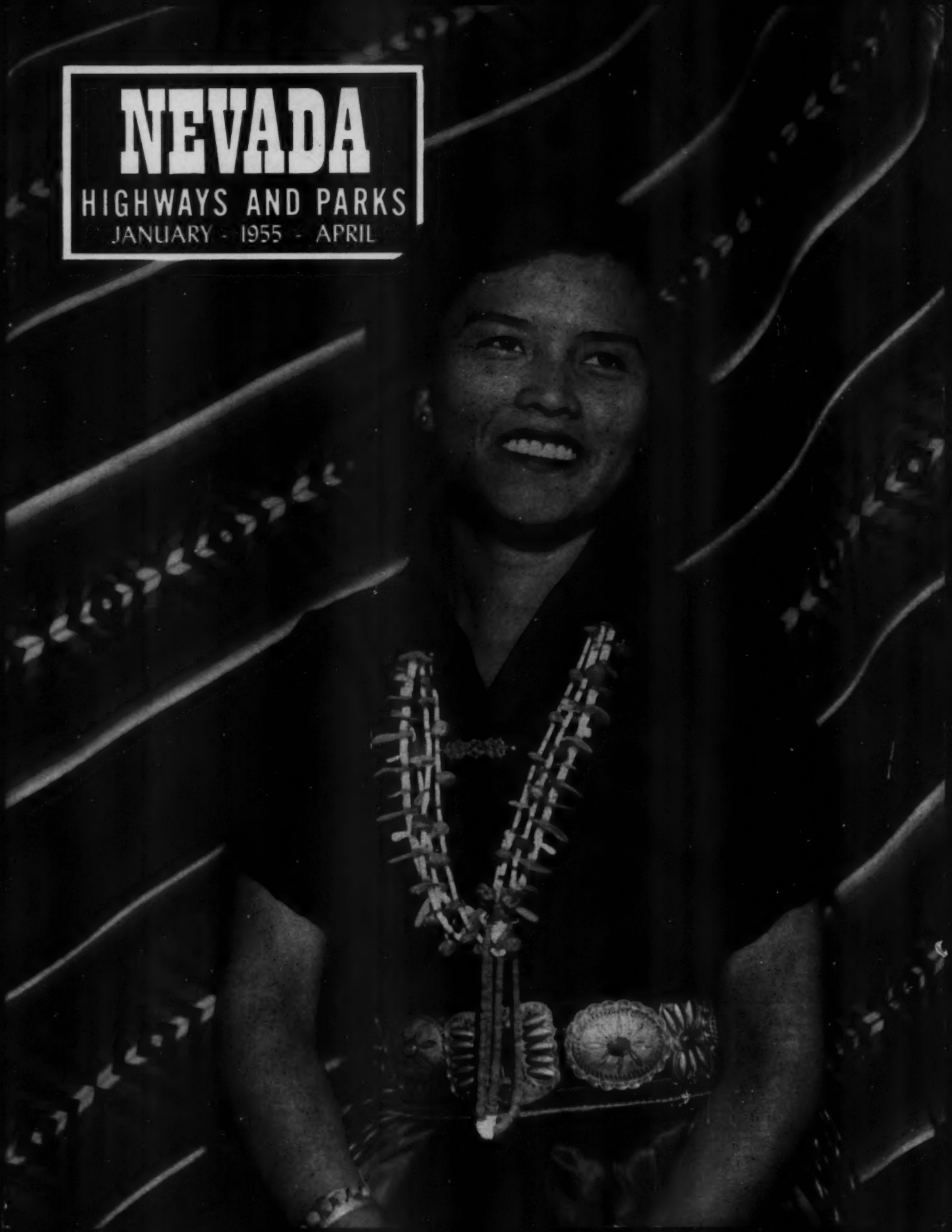
NEVADA

HIGHWAYS AND PARKS

JANUARY - 1955 - APRIL



NEVADA HIGHWAYS AND PARKS

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Nevada Highways and Parks Magazine is not to be sold.

THE FRONT COVER

Miss Mary Ann Henderson, Navajo Indian maid from Littlewater, Arizona, graduated from Nevada's Stewart School last year and is now an instructional aide interpreter. She typifies the younger generation of the Navajo femininity, which has adopted the modern American customs, although thoroughly loyal to the traditions of her forebears. With all the educational facilities as afforded at Stewart, this modern Indian maid possesses full qualifications for competing well in her chosen field of activity. Even though the picturesque feathered tribal headdress is lacking, as illustrated on our front cover page, the young woman reflects the striking beauty of Navajo girls. It should be noted that the silver and turquoise ornamentation, so much favored by the older members of the tribe, has not lost its appeal to the younger generation, and is very popular with the Indian maids.

PHOTOGRAPHIC CREDITS

Color: Pages 1, 4, 5, 12, 13, 16, 17, 20, 21, 24, 25, 28, 29, 32, Adrian Atwater, Highway Department staff photographer; pages 8 and 9, Maye Greulich.

Black and white: Pages 2, 3, 10, 11, 14, 15, 19, top of pages 23, 26, 27, 30, 31, Adrian Atwater, Highway Department staff photographer; pages 6, 7, Chamber of Commerce, Reno; pages 18, 22, 23, by Irwin Fehr, Ely, through courtesy of Kennecott Copper Corporation.

Nevada's winter wonderland looking toward Lake Tahoe from the top of Slide Mountain.

Experts on the "slats" enjoy the broad areas in trying out their skill at Reno Ski Bowl, 25 miles southwest of Reno.

Fourth and Virginia, Reno, Nevada, (U.S. 40 and U.S. 395), one of the busiest street intersections between the Rocky Mountains and the Sierra Nevada.

RENO'S SCENIC SLIDE MOUNTAIN

RENO SKI BOWL, a huge natural land indentation on the northeastern flank of 9,600-foot Slide Mountain, 25 miles southwest of Reno and 30 miles northwest of Carson City, is equipped with access and use facilities, primarily as a winter recreational area. The plant layout was completed in 1953 and the site has functioned in the capacity of an excellent winter playground for two seasons. For a winter sports area it has proved itself an outstanding success. While promoters of this enterprise believed it had splendid summer scenic potentials, that phase of the project was given secondary, although serious, consideration. It has more than met the expectations for both winter and summer use. Since placing in service the two sections of the double-chair lift, the Slide Mountain site has spontaneously projected itself into an outstanding summer scenic observation spot which attracts people from all over the nation. Because of this dual asset Washoe Development Corporation officials, in cooperation with Forest Service officials, are elated over the prospects of its all-year operating features and have ambitious plans to make it one of the outstanding observation points in the entire West.

Reno Ski Bowl's worth as a winter playground of superior qualifications has never been in doubt. Through two seasons now, this fact has become obvious because it has brought a greater number of winter sports fans and events to the area during the second season than it did during its initial year of operation.

Advantages pointed out are that the lowest level of the bowl's ski lift is higher than the top of any other lift in the country; that so well laid out is the area, spectators are able to watch entire routes of downhill and slalom races from one vantage point; that the combination of high altitude and terrain assures a longer snow season than almost any

Where You

Ride the Ski Lift to the Top O' the World

For

Summer Scenery

Or

Winter Sports

Reno Ski Bowl offers one of the finest winter sports areas in the entire West. For all classes of skiing—cross-country, slalom, jumping or practice courses—the area affords excellent snow, terrain and access facilities with a double-chair lift as an added asset. Shelter, food and a cheerful fireplace are available at the Petit Chalet, near the bottom terminal of the upper lift.

Chalet and Shelter Houses

Anywhere you look, from the top of the Reno Ski Bowl, the natural scenery is superb, and its excellence is doubly impressive during the summer season. On this page (top) the crest of Mount Rose, 10,800 feet above sea level, was captured. At the bottom you are looking westward to see the north end of one of the world's most beautiful lakes—Lake Tahoe. Other illustrations give details to be found at the "top of the world" observation station. Gnarled trees grow where it seems impossible for them to find nourishment. A glimpse of the strong steel towers supporting the double-chair lift which carries passengers to the top is reassuring. Every safety factor known to modern engineering has been designed into this overhead cable tramway for use in mountain country.

Highway To The Sky

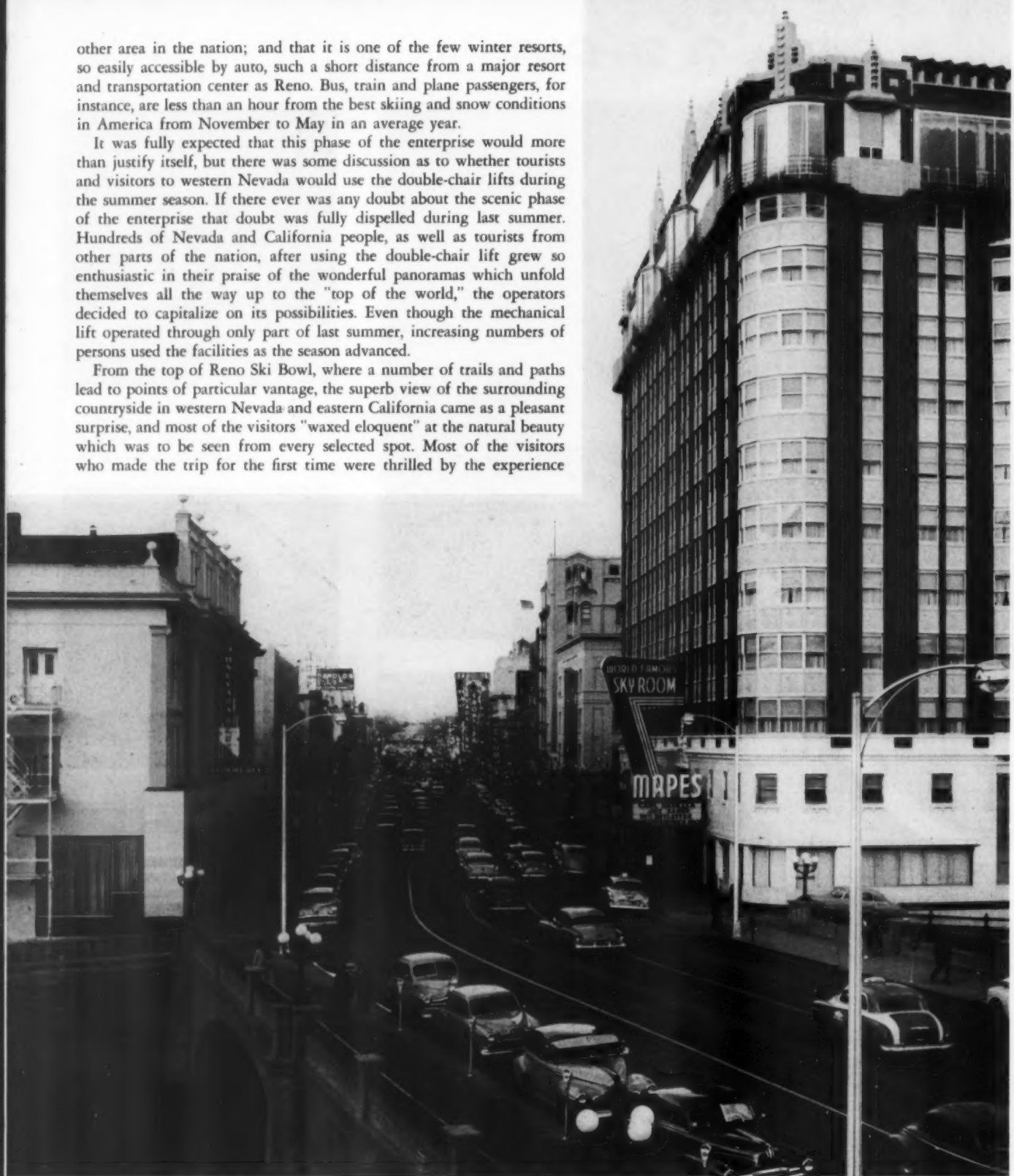
Let's look to the eastern view from the top. Top center picture gives an excellent panorama of Washoe Valley and distant mountain ranges, while the lower picture shows how colorful Washoe Lake fits into the Nevada scene. At the crest of Slide Mountain, trees have had a rough time of it over the years, through many winters of snow and cold, and they show it. The red tower forms a frame through which striking views of the downhill terrain unfolds. The circle pointer, fastened to a table at the top, indicates the various features giving direction and distance from the site. The upper part of the Stillwater Range, nearly 100 miles distant, can frequently be clearly seen. Elevation at the top of the upper ski lift is 9,600 feet above sea level.

and The Beautiful Lake Tahoe Region

other area in the nation; and that it is one of the few winter resorts, so easily accessible by auto, such a short distance from a major resort and transportation center as Reno. Bus, train and plane passengers, for instance, are less than an hour from the best skiing and snow conditions in America from November to May in an average year.

It was fully expected that this phase of the enterprise would more than justify itself, but there was some discussion as to whether tourists and visitors to western Nevada would use the double-chair lifts during the summer season. If there ever was any doubt about the scenic phase of the enterprise that doubt was fully dispelled during last summer. Hundreds of Nevada and California people, as well as tourists from other parts of the nation, after using the double-chair lift grew so enthusiastic in their praise of the wonderful panoramas which unfold themselves all the way up to the "top of the world," the operators decided to capitalize on its possibilities. Even though the mechanical lift operated through only part of last summer, increasing numbers of persons used the facilities as the season advanced.

From the top of Reno Ski Bowl, where a number of trails and paths lead to points of particular vantage, the superb view of the surrounding countryside in western Nevada and eastern California came as a pleasant surprise, and most of the visitors "waxed eloquent" at the natural beauty which was to be seen from every selected spot. Most of the visitors who made the trip for the first time were thrilled by the experience



This is famous Virginia Street, in Reno, looking north from the Truckee River bridge. The "Biggest Little City in the World" packs a lot of modern stores, banks, clubs, hotels, and food shops along this world-famous thoroughfare of western Nevada.

South of the Truckee River bridge, on Virginia Street, in the heart of Reno, are the famous Riverside Hotel and Washoe County Courthouse.

and vowed to return because they had little previous conception of the gorgeous natural panoramas which came into view at that high level. Views from the mountain crest are simply breath-taking. Even Nevada folk who are accustomed to mountain scenes of all kinds were amazed to find that they had at their own back door such marvelous natural views. Still better was the very convenient way of getting to the top to view some of these natural wonders.

The popularity of trips to the top of Slide Mountain is just beginning. With a few finishing touches added to the comfort stations and picnic spots, the shady nooks, and the lookout points, this "top of the world" station promises to achieve nation-wide renown for its excellent views of rugged mountains, colorful valleys, peaceful meadows, beautiful lakes, heavy forests and bold promontories.

Embracing a natural flat area of wide space, the Reno Ski Bowl parking lot will conveniently accommodate hundreds of cars. The bowl itself is big enough for any and all winter sports events which may be scheduled by organized groups, and this broad statement includes the possibility of the Olympic winter sports in the future. During the past two seasons national, regional and University meets were conducted there with great success. Those who came from distant cities and states to participate in the winter sports programs, competitors as well as observers, were lavish in their compliments about the ideal setup for winterland fun and capacity for the contests.

Tournaments were held as early as December of last year, and several other meets took place during the first two months of 1955. These were well attended, competition was keen, and many expert riders of the "slats" participated in the events.

On this page we have various scenes at the Reno Ski Bowl site, in its summer garb. There is the lower terminal of the upper ski lift, at the upper left. A picture showing the type of terrain at the bowl, as it appears in summer, is shown at the upper right. Lower left shows the upper terminal of the upper lift. The overhead cable tram was constructed in two sections and embraces every safety device known to modern engineering. The lower section is 5,300 feet long, while the upper section is 3,800 feet long. The upper terminal of the upper lift is about 9,000 feet elevation.

Also Scenic

At the upper end of the upper lift, unloading of passengers is on a wide platform and under the supervision of experienced personnel. It also facilitates the unloading of the chairs while the tram is in slow motion, or subject to immediate stops. The parking lot, a wide circular area at the bottom, near the Petite Chalet, is large enough to accommodate the hundreds of cars of those who visit the bowl either for winter sports or summer recreation.

FINEST

Winter Recreational Area In The Entire West

Double chairs make for maximum safety and carrying capacity.

The terrain is suitable at Reno Ski Bowl for cross-country races, for downhill races, for jumps, slalom contests and also for large practice areas. Both novices and experts say this is one of the finest locations in the land. The area is easily accessible over a broad, paved highway from the Truckee Meadows, about 3,000 feet lower in altitude. During the winter season the road serving the area is kept open for travel at least as far as the lower terminal of the lower section of the chair lift. From there the overhead tramway hauls fans to the lower terminal of the upper lift, a distance of 5,300 feet and possibly a thousand feet higher in altitude. A transfer is made to similar chairs at the lower terminal of the upper lift, which goes up to the top of the mountain, a distance of 3,800 feet, with another altitude hop of several thousand feet. The lift is an overhead cable type with safety devices, rolling over pulleys set on tall, strong, steel towers securely embedded in solid concrete footings at safe intervals, to carry the load. During the summer season when road conditions are no problem only the upper section of the lift is in operation, but access to this is over the new highway directly to the terminal. This gives full facility to any and all visitors who want to go to the crest of Slide Mountain. The drive from the lower terminal of the lower lift is over the new "Highway to the Sky," which follows a shelf on the east side of the mountain. From this highway the panorama to the east is sweeping, very colorful, and gives a foretaste of what to expect when you reach the top.

It is quite a common occurrence, even during the severest of winters, to find that the Truckee Meadows, the valley lying east of Slide Mountain, is comparatively free from snow, while the flanks and tops of the bowl, at a much higher level, are carpeted with from 5 to 10 feet of snow, suitable for all snow sports. The closeness of Reno, Carson City, and Virginia City add greatly to the potentialities of the site.

It's less than an hour's run from Reno, Carson City or Virginia City to the lower end of the lower lift. Thousands of enthusiasts have taken

The "big wheel" at the lower terminal of the "upper lift" at the Reno Ski Bowl.

advantage of these excellent facilities to participate in their favorite outdoor winter sports, and the popularity increases with each season.

The younger generation has not been overlooked. In fact, especial attention is given to juveniles to see that they acquire the proper and systematic training necessary to make them good skiers. Instructors in the art of skiing have been engaged by Reno organizations to teach the young boys and girls to ski so that they may learn the proper way to handle themselves both as to posture and balance on the narrow slats. Special transportation facilities are furnished on weekends during the winter season to make the 25-mile run to the ski bowl where the children are placed under the supervision of experts. Taught the tricks of the sport, by easy stages, they become proficient in their techniques on the runners and soon glide over the snow-covered slopes with the greatest of ease and control and sometimes at terrific speed. Besides the outdoor aspects of the playgrounds and the social contacts, facilities for winter comfort are provided at the Petit Chalet, as well as at other stations in the vicinity.

To stimulate interest in the winter sports feature of the Reno area, groups of business people in "The Biggest Little City in the World" have set up regular events on weekly schedules. There's Men's Day, Women's Day, Family Day, and these are special for those in the indicated category who like to go to the snowbanks on the mountainside to have some winter fun. A special program for high school students has been arranged, and also a day is set aside for kiddies ranging from 3 years to those in their teens. These youngsters love the outdoor recreation and take to skiing like a duck takes to water. Before many weekends have passed they are out on their own, sliding over the mountain courses at good speed while displaying surprising control.

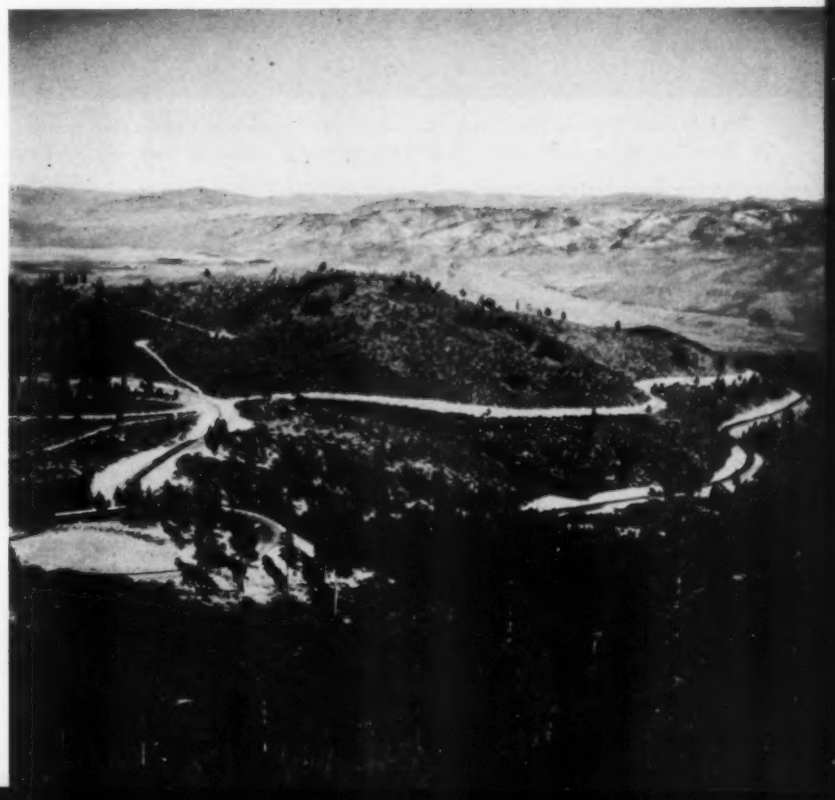
The bowl is in rugged country of western Nevada, which, until the project was developed, could not be gotten into except by foot or horseback. Now roads and trails have been constructed into the location and with a 4-wheel-drive jeep one can negotiate most any road in the area (some which reach the top of the peak), although regular passenger cars are not recommended for some of these bypaths which have the steeper grades.

Highways to winter wonderland and summer dreamland area are well marked.

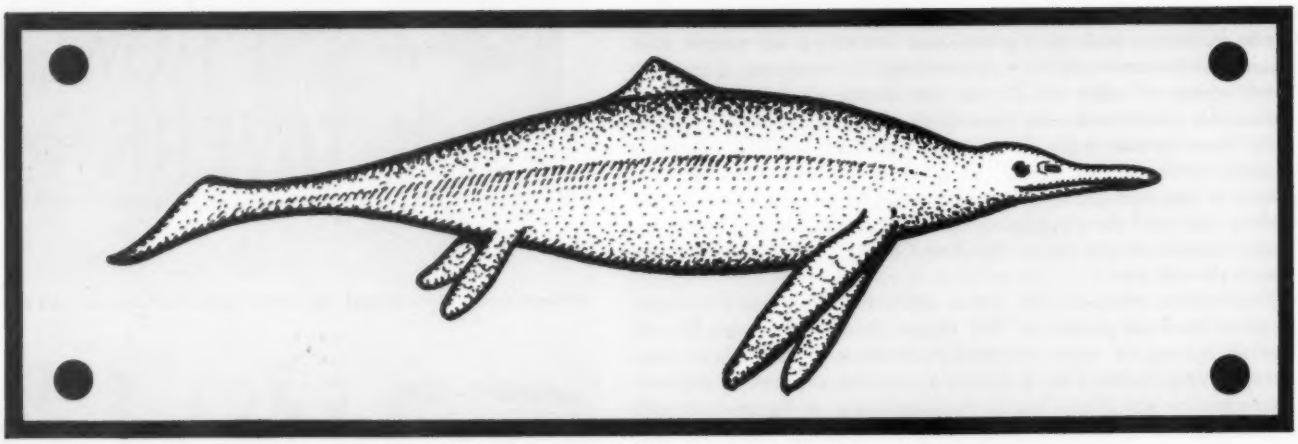
Cutting the ribbon at the official opening of the "Highway to the Sky."

Looking east over the ascending paved Mount Rose road which affords easy, safe and comfortable access to the center of activities.

As indicated on the map Reno is the strategic starting point for trips to the Reno Ski Bowl area. However, highways from Carson City and Virginia City connect with the Mount Rose Highway, the access route to the site. For that matter, all roads in Nevada lead toward the Reno Ski Bowl for winter sports, and they can also be conveniently used in summer to go to one of the most striking scenic spots in the West.



ICHTHYOSAURUS



This, roughly, is what the ichthyosaur looked like when it swam in the Nevada Ocean.

The broad Ione Valley in Nye County, stark in solitude, affords access to the fossil quarry. West Union Canyon, lower east side of Ione Valley, where the ichthyosaur fossil rocks were found.

Superintendent of State Parks, Thomas W. Miller, holding a vertebra fossil.

Dr. Charles L. Camp, University of California paleontologist, looking over one of the discoveries.

A 13-letter Sea Monster Which Turned Into Stone

Now Unearthed In Nevada

It Lived 160,000,000 Years Ago

Editor's Note—Material used here was especially prepared by Dr. Charles L. Camp, paleontologist, University of California, Berkeley, for public information and printed by the *Fallon* (Nevada) *Eagle,* in 1954. Dr. Camp has devoted much time and study to this important discovery in Nevada and is greatly enthused over the significance of its paleontological aspects. Dr. Camp plans to continue, if feasible, developing the deposit during the current year. We are indebted to Dr. Camp, and express our deep appreciation to him for use of this material.

SEAGOING reptiles (Ichthyosaurs) of great age and great size lie petrified in the limestones of the Shoshone Mountains in the central Nevada desert.

These monsters swam in an ancient sea, an arm of the Pacific Ocean, which covered western Nevada, 160,000,000 years ago, long before the California Sierra Nevada mountains were uplifted from the ocean waters.

The quarry in which these skeletons are found is the old sea floor uplifted 7,000 feet above its former level. However, the bones rest just as they were deposited and swept by the waves long ago.

Looking like giant porpoises, these creatures had fins and paddles like whales and fishes. The paddles, used as oars, are the modified legs and feet of the earlier ancestors of the ichthyosaur which lived on land.

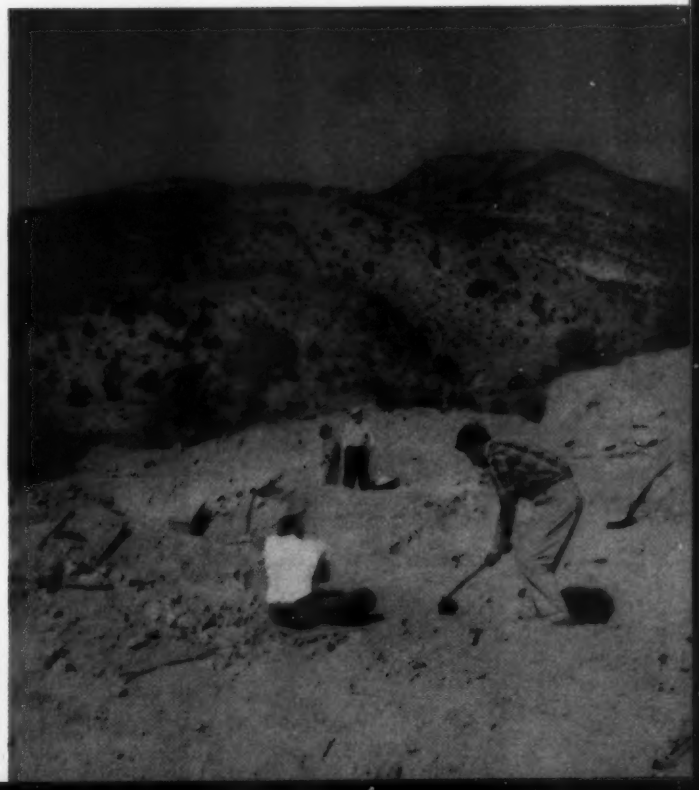
Ichthyosaurs infested the Nevada seas for millions of years from the early Age of Reptiles nearly 200,000,000 years ago in the Middle Triassic (West Humboldt Mountains and New Pass, near Austin) to the time of the present quarry (Upper Triassic). The Age of Reptiles comprises Triassic, Jurassic and Cretaceous geological periods in that order.

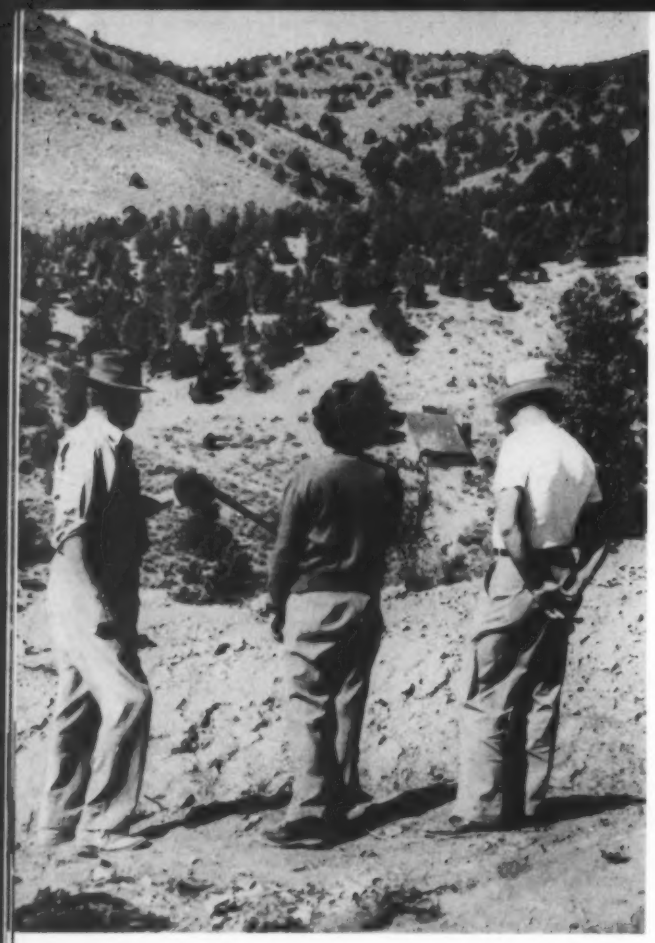
In the northern part of the exposed quarry, a series of large vertebra including seven tail bones dips down over three steps (faults) and continues under the path which leads from the lower campsite to the upper

Work of exposing the fossil rocks is exacting and must be done with great care. Dr. Camp uses a whisk broom to remove loose dirt from a specimen.

Vertebra pieces, measuring 14 inches in diameter, were excavated and carefully processed for preservation.

Several University of California students aided in the excavation work last year. Picture also shows Mount Berlin, highest point in the vicinity.





end of the quarry. A part of a skull and four vertebrae at the northern corner of the already exposed ground may belong to this group, but probably represents a fifth individual, according to Dr. Camp's present study of the archeological discovery.

There are four or five fossilized individuals present on the main level of the quarry. About 15 inches above this level are two mounds containing broken ribs and large bones. This is another burial which took place later, Dr. Camp believes.

Four feet above the quarry floor is still another and much later burial, consisting of several large vertebrae and ribs; and 15 feet above the south edge of the quarry, at the top of the southeast high bank, is still another specimen much larger than those in view. The one vertebra of this creature so far discovered measures 13½ inches in diameter, in contrast with 10 inches maximum for the others.

Other specimens of similar size and form occur elsewhere in the vicinity of the quarry. A skull was excavated directly above the ball mill (an ore processing mill), which is located across the canyon about 0.2 of a mile distant. This skull lacked the slender snout with its teeth, and the rear half measured four feet, indicating that the entire skull was about eight feet in length. The skull bones recovered weighed 1,200 pounds and were sent to the University of California, at Berkeley, for processing and preservation.

The length of the body of one of the specimens found in the Shoshone Mountain deposits is estimated at about 50 feet, of which at least 20 feet was tail, 20 feet between front and hind paddles and 10 feet of neck and head. The vertebra of this specimen reaches 10 inches in diameter and there were at least 125 of them. The ribs reached at least nine feet in length indicating that the diameter of the thickest part of the body was about 8 feet. A whale of this size would weigh probably 10 or 12 tons.

It is one of the most remarkable deposits of its kind and in some respects it is unequalled, Dr. Charles L. Camp has stated. If provision of funds is made for its protection and improvement it will not be necessary to remove the bones to a museum—the specimens as they lie will resist weathering for many years.

Hundreds of pieces of fossil rocks were found imbedded in the West Union Canyon quarry. Across the canyon, near the ore crushing mill, an almost complete skull of the antediluvian creature, weighing 1,200 pounds, was excavated during 1954. This skull fossil was sent to Berkeley for future processing. Lower illustration shows many of the disc-like fossil rocks which belonged, probably, to several ichthyosaurs. It is planned, if feasible, to establish this site as a part of the Nevada State Park System. Study of these remains is now progressing and enough is known to say that the present specimens probably are all of one species of a giant ichthyosaur different from any previously described.

Several sections of jawbone fossils have been found in the big deposit. Dr. Camp, director of the work, points to one which has been exposed.

"Roughing it" in West Union Canyon is in vogue, while work proceeds at the quarry site a quarter mile distant.

The quarry lies in West Union Canyon in the Shoshone Mountains, Nye County, Nevada. It is located 70 miles north of Tonopah; 100 miles southeast of Fallon; 50 miles southwest of Austin; and 43 miles south of Eastgate, on highway U.S. 50. From lone visitors drive south five and one-half miles to Berlin and inquire there how to get to the quarry, two and one-tenth miles beyond. Roads in that area are improved dirt roads in good travel condition, but not paved.

KENNECOTT COPPER CORPORATION

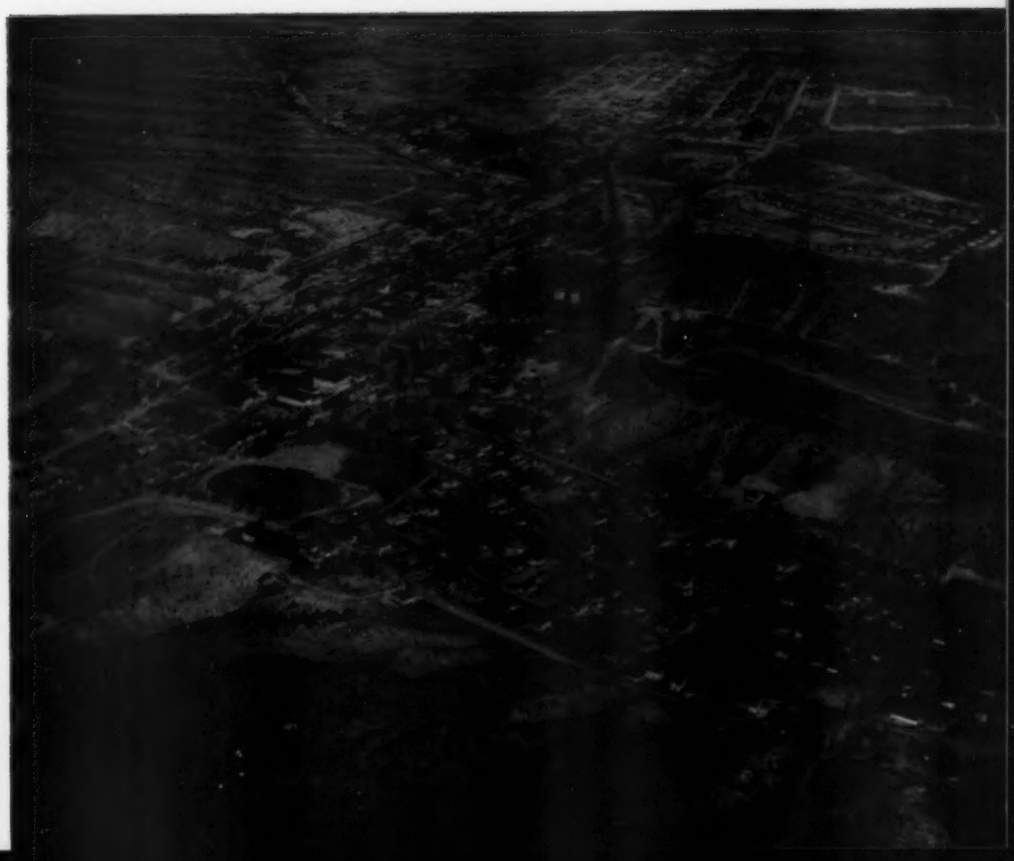
THE ELY, NEVADA, COPPE

On these two pages we picture the various units of
Pine County, Nevada district, showing the large smelte
bottom left, the huge Copperflat Pit (the granddaddy
page 17 was taken from the bottom of the hole. Bel
bottom piece shows machinery in action. Besides this
In addition, two shaft units are all integrated into o
Kennecott Copper Corporation and the Consolidated C
These units of the huge project are at McGill, Nevad
up around the project. Schools, churches, stores and
available for the hundreds of employees of the working
and welfare, and safety alertness programs throughout t
playgrounds for children, and many other supplemental
companies for the convenience of the workers.

CONSOLIDATED COPPERMINES COMPANY

ADA, COPPER OPERATIONS

various units of the great copper operation in the White
the large smelter at top left, the processing mill at the
he granddaddy of them all) at top center. The view on
of the hole. Below is an airview of Ely, and the center
n. Besides this pit, four others are now in the making.
tegrated into one huge operation of copper mining by
Consolidated Coppermines Company in eastern Nevada.
t McGill, Nevada, a small, but modern, community built
es, stores and moderately sized comfortable houses are
of the workings. Employee recreational facilities, health
ms throughout the entire setup, libraries, swimming pools,
er supplemental activities have been inaugurated by the
orkers.



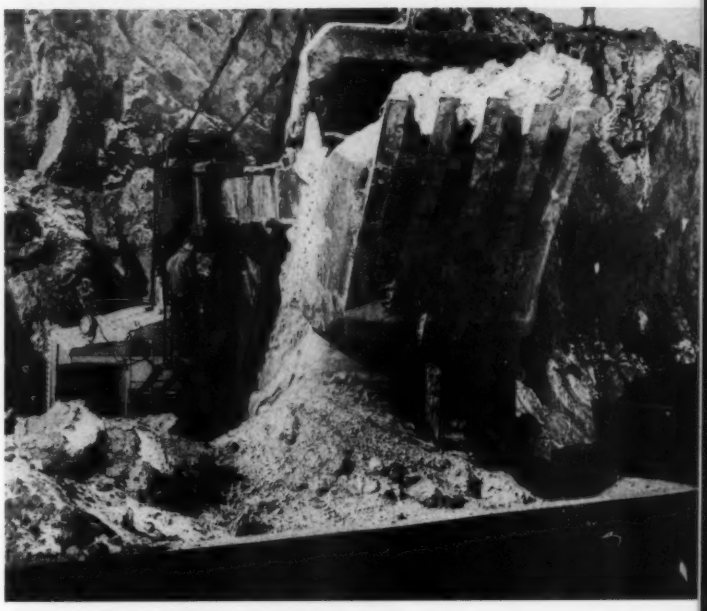
This illustration gives an over-all air view of the great copper workings in the White Pine County, Nevada, area. Following the numbers: 1, Veteran Pit; 2, Morris Pit; 3, Brooks Pit; 4, Waste dumps from Morris and Brooks Pits; 5, town of Kimberley; 6, town of New Ruth; 7, Deep Ruth shaft; 8, Kellinski shaft; 9, Kimbley Pit; 10, the old town of Ruth; and 11, the giant of them all—the Copper Flat Pit.

Five Deep Manmade Nevada Pits Yield Thousands of Tons of Copper Ore Each Day

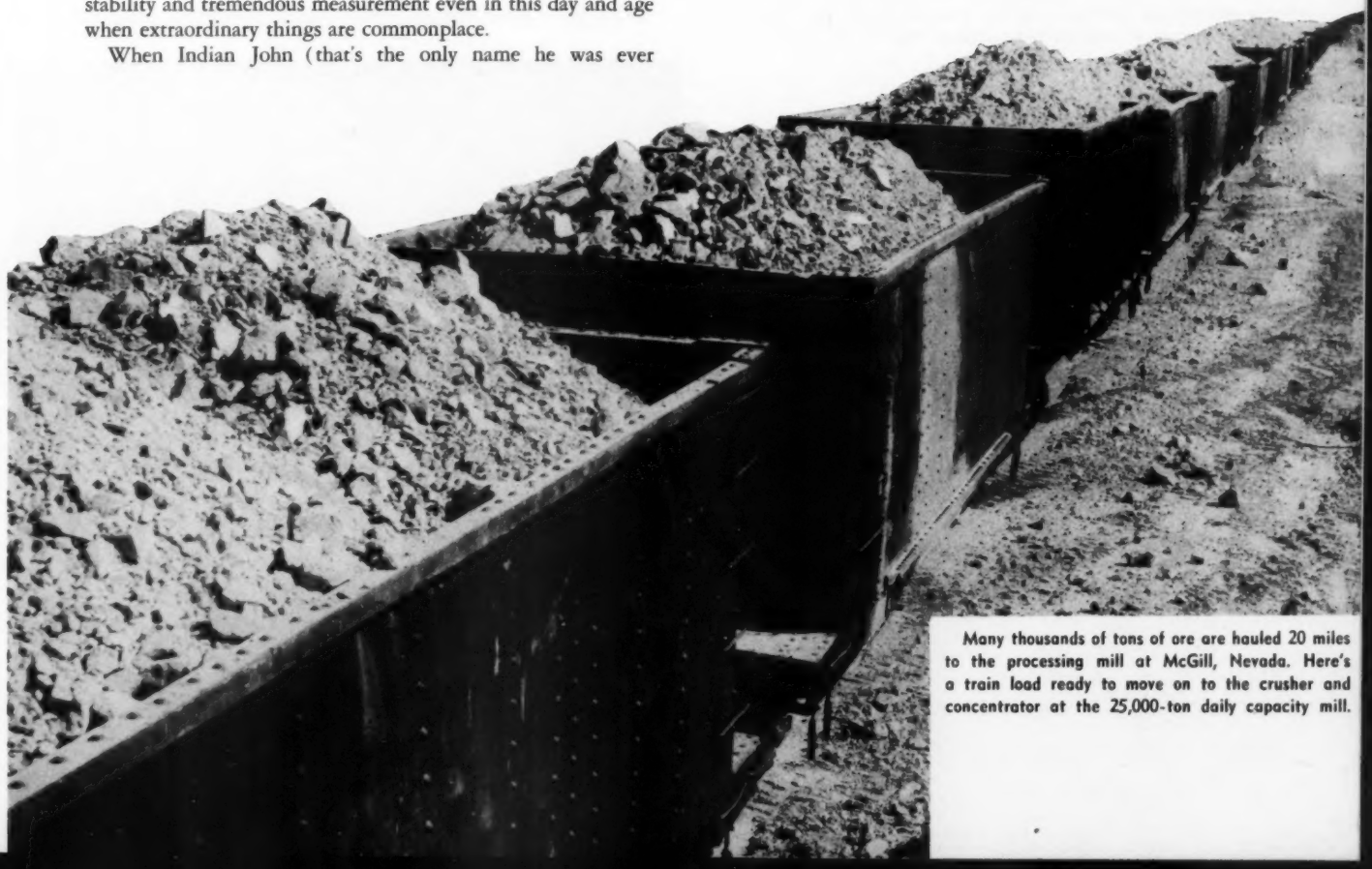
KENNECOTT Copper Corporation and Consolidated Coppermines Company, two famous names in Nevada's mining register, have been identified with the Ely district for decades, mining ore from deep pits and producing blister copper in enormous volume. From the looks of things they will be busy in that vicinity poking drill holes into the ground, shoveling rock and dirt into railroad cars or motor trucks, building up huge dump piles of waste material, hauling to and milling ore at McGill, shipping blister copper out by the ton, and handing out millions of dollars in payroll checks for a long, long time. The setup is enormous. It is recognized as Nevada's greatest individual enterprise project involving hundreds of employees, hundreds of building units, thousands of pieces of mobile and stationary machinery, and investments running into millions of dollars.

White Pine County, particularly in the Ely-Ruth-Kimberly-McGill sectors, was greatly favored by nature with tremendously large copper ore deposits, disseminated sparingly in large masses of rock, of such an extent that one colossal hole wasn't enough to mine it all. Four other pits, already of great size but incomplete—like links in a monstrous chain—were necessary and came into being only a comparatively short time ago to adequately develop the ever-expanding potential of the area. Because both companies have learned, through years of wide experience and scientific application, how to successfully and efficiently handle these low copper content rocks on a quantity production basis, the copper mining business of eastern Nevada has grown from a puny beginning to one of stability and tremendous measurement even in this day and age when extraordinary things are commonplace.

When Indian John (that's the only name he was ever



Big power shovels move a lot of dirt in one day at the copper deposits.



Many thousands of tons of ore are hauled 20 miles to the processing mill at McGill, Nevada. Here's a train load ready to move on to the crusher and concentrator at the 25,000-ton daily capacity mill.

Morris and Brooks Pits; 5, Town of Kimberley; 6, Town of New Ruth; 7, Deep Ruth shaft; 8, Kellinski shaft; 9, Kimbley Pit; 10, the old town of Ruth; and 11, the giant of them all—the Copper Flat Pit.

The Veteran Pit, farthest west in the copper ore zone, is shown at the upper left. At the bottom is the Morris Pit, already a deep hole, although only in its early stages of development. The lower right photograph shows drilling rigs in the Veteran Pit capturing subsurface samples at regular spaces. These samples are tested and results recorded and studied. Correlation of the combined totals gives the operating companies a comprehensive picture of the ore possibilities.

called), back in 1867 showed the then desolate, almost forbidding, ground to a party of prospectors and displayed the mineralized pieces he found there, neither he nor the prospectors dreamed the site would develop into one of the world's large copper mining undertakings.

Originally the gold content of the area, which is now salvaged as a by-product, was the more attractive feature and mining was conducted for recovery of this precious metal itself. Since early 1900 the gold extraction assumed a secondary import, when, through constant churn and core drilling, it was disclosed that the rocks, over a large area having some alternating barren patches, were impregnated with copper ores of a low grade but could be profitably recovered provided efficient methods were adopted in the process. This, Kennecott and Consolidated Coppermines have done.

The history begins with a site on the banks of Murry Creek, known as Murry Creek Station, the first settlement in the district and tied closely to the history of the Robinson mining district. The district was organized on March 16, 1868, and was named after Tom Robinson, who was a member of the party which Indian John befriended.

Within a year after the discovery over a thousand mining claims had been recorded. During the march of time some of the earlier camps all but disappeared. A few have maintained their status and importance, such as Ely, Ruth and Kimberly. To these, a little later, was added another unit—McGill, where a huge concentrator and smelter were placed in service to beneficiate the ore.

Ely seems to have been pinpointed as the center of activity when the county seat was transferred from the sensational but diminishing silver camp of Hamilton, about 30 miles to the west, in 1887. The name Ely supposedly came from John Ely, a native of Illinois, who was active in the area during the early days.

In 1906 Mark Requa, another name frequently identified

with the progressive upbuilding of the West, guided the construction of the Nevada Northern Railroad which runs from Ely to Cobre in Elko County, to connect with the main line of the Southern Pacific. After this railroad was completed it made large scale mining in the Ely district economically feasible. Nevada Consolidated Copper Company started ore production in 1907, and began milling and smelting in 1908, using new methods originated by Daniel Cowan Jackling, one of the outstanding names connected with copper all over the world. Jackling evolved an efficient method for handling the low-grade copper ores and then the Ely district started to unfold in earnest. Nevada Consolidated was later incorporated into the Kennecott Copper Corporation as the Nevada Mines Division.

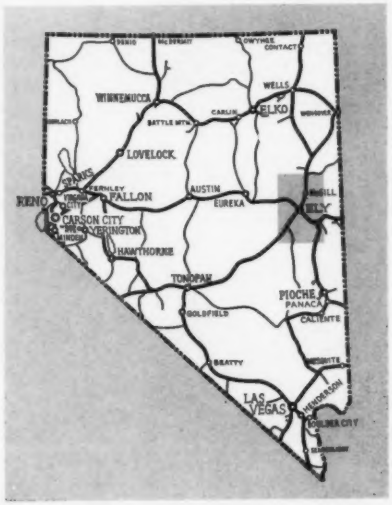
Aside from a joint operation with Consolidated Coppermines Corporation, on one or two units, at the Copper Flat Pit and the Veteran Pit, Kennecott digs the holes, turns the wheels of the mill, fires the smelter, highballs the trains and dispatches the trucks from the bottom of the pits to the processing plant at McGill, 20 miles distant. Waste material is piled up on huge dumps while the ore is sent to the mill.

To give one an idea of what has happened in the Ely district, evidence shows that the known ore reserves in 1954 were substantially greater than they were in 1906, even though the Ruth and nearby mines and pits have produced approximately $800,000,000 in the form of 4,000,000 tons of copper, 2,000,000 ounces of gold, and 11,000,000 ounces of silver.

The copper deposits at Ruth, or rather the Copper Flat Pit adjacent to both the old and the new town of Ruth, are the center of all the mining activities in the district. They moved the town of Ruth, houses, garages, business and office buildings, to a new site around the corner from one of the biggest waste dumps in the State, and called it "New Ruth." This was done so that mining could be conducted, through the block cave method, under the site where old Ruth stood. The entire

The Brooks Pit and Kimbley Pit.

This broad highway approach affords access to the properties where the mill, concentrator and smelter workings of Kennecott Copper Corporation are located at McGill, Nevada.



Copper deposits of enormous extent are found in the Ely-McGill-Ruth-Kimberly district of eastern Nevada, in the area shown on the above map. The map also indicates the highways serving the area.

The Deep Ruth shaft will afford an outlet for much underground copper ore.

fertile area of copper impregnation is localized in a zone which runs roughly east and west for about 7 miles and is about a mile wide.

In this over-all area, at the present time, five separate pits are in the process of excavation and development and each day each hole gets a little deeper and a little bigger. All of the work is integrated so that it is all just one big job.

These huge cavaties are the Veteran Pit, the Morris Pit, the Brooks Pit, the Copper Flat Pit (the granddaddy of them all), and the Kimbley Pit in their sequential occurrence from west to east. In addition, two other working units of major size, the Deep Ruth shaft and the Kellinski shaft, about a mile apart, will be connected underground to facilitate block cave mining beneath the site of old Ruth of 25,000,000 tons of copper ore in the subsurface ground. Production from this area is expected some time early in 1956.

The Veteran Pit, farthest west of the five, was started in October 1953, and then the dirt flew. Between that date and December 31, 1953, a three months' time lapse, 4,000,000 tons of waste material had been moved. The pit, when fully developed, will be 2,500 feet long, 1,500 feet wide, and about 600 feet deep, and will yield approximately 20,000,000 tons of copper ore with 40,000,000 tons of waste material removed. That in itself is a major undertaking and reflects the progress which has been made since the pick and shovel days because now 30-ton carry-alls, high powered diesel bulldozers, and 5-cubic-yard power shovels get rid of the dirt in a hurry.

The Morris Pit and the Brooks Pit, next door neighbors across the road, farther east from the Veteran Pit, already have reached large scale size with the removal of additional millions

New Ruth has a location around the corner from huge waste dumps and high shaft frames. Field offices and pit operation controls are maintained there.

of tons of waste material. Eventually these two pits will reach the size of the Veteran Pit, and contribute their share of the colossal tonnage of recoverable copper ore. The Morris Pit already looks like a big hole headed for China.

The king-size cavity nearest the city of Ely is the Kimbley Pit, and, like the other three, so much waste material is moved at the same time that 70 cars of ore are made available for shipment to the mill daily. This Kimbley Pit eventually will reach dimensions like this: 1,000 feet long, 1,500 feet wide, and 300 feet deep. This pit is considered the smallest of the group.

To do the big job of excavating and hauling, one of the largest contracting firms in Nevada, the Isbell Construction Company of Reno, was called in to help.

But these four pit operations, at present, are really "small potatoes," as big as they are, when compared with the colossal hole at Copper Flat, sometimes called the Liberty Pit. That cavity has been in the making for 46 years, and, naturally, you'd expect to see a very big hole in the ground. You won't be disappointed, we can assure you.

When miners first began to work at the site in 1908, it wasn't a hole—it was actually two small hillocks about 50 feet high. Those hills had to be leveled down before the status as a hole could be started. After all those years, with 5-yard shovels chewing away at five different places on the walls and bottom, thousands of pounds of powder blasting down hillsides, whistling locomotives pulling their hearts out to reach the rim over 14 miles of rails, with 8 cars filled with 65 tons of ore, miles and miles of automobile roads switchbacking from the rim to the bottom, 500 feet down, millions of man-hours of labor, hundreds of employees and millions of dollars in working payrolls, you get the idea as to the staggering magnitude of the material removed and the size of the hole. Currently Copper Flat Pit is one mile long, five-eighths of a mile wide and has an average depth of 500 feet.

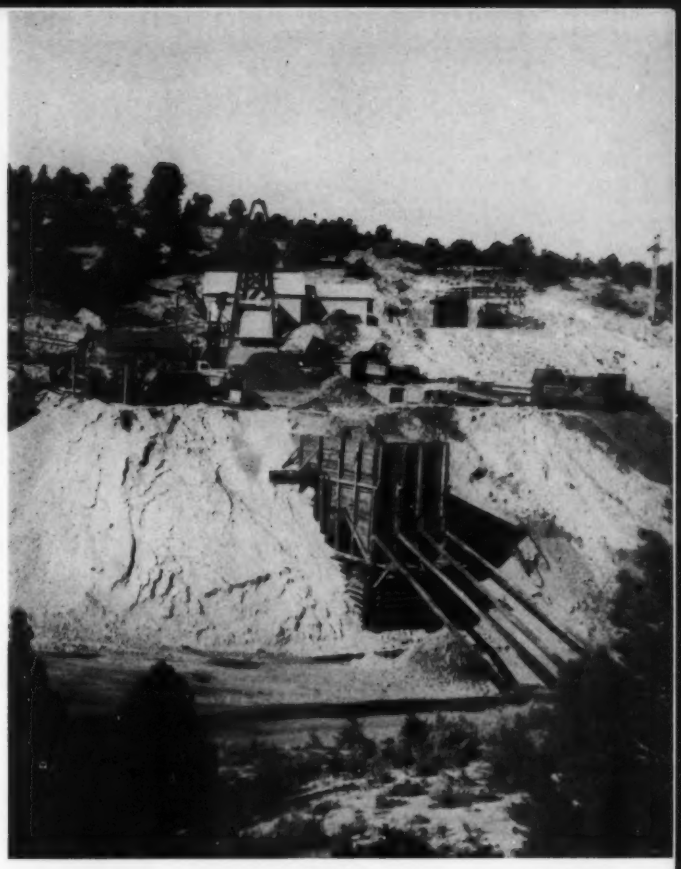
To keep you busy on the adding machine for a few minutes listen to this: To date, Kennecott Copper Corporation has removed 124,318,000 tons of ore and 201,372,000 tons of waste from this pit alone. This has produced the staggering total of 3,089,174,000 pounds of copper valued at $474,873,000 as well as 1,313,000 ounces of gold, and 4,871,000 ounces of silver with a total valuation of $40,049,800.

Have you ever thought that much copper came from one hole in Nevada?

This enormous pit reflects spectacular color effects. Many different tones and hues are characteristic of the wall rocks and the bottom of this oval-shaped hole, with so many benches climbing its sides and ends they are hard to count. The pinkish colored rock is described as rhyolite porphyry; the grayish green rock is limestone, and the light white to gray rock is the ore-bearing material.

When one stands at the east end of the pit, at the top rim, when the sunlight strikes the project just right, the colors of this colossal hole are gorgeous to see. It's almost breathtaking.

After the ore is brought to the surface, from the bottom of the pits, it is hauled 20 miles to the mill at McGill. There the ore is dumped into bins, and, under complete control fed into a series of huge crushers which grind it to a powder. Next it gets into flotation cells with chemical solutions where it is processed, then concentrated. Concentrates are subsequently moved to the smelter for further treatment in furnaces the end result of which is blister copper. The huge mill, grinding and groaning all day long, processes about 21,000 tons of ore daily



The Kellinski shaft connects underground with the Deep Ruth shaft.

which is further processed down to about 750 tons of concentrates.

The first step in the smelting operation is to melt the concentrates and produce a product called matte. This is done in reverberatory furnaces, of which there are two at McGill, one operating and the other ready as a standby.

The matte coming from the reverberatories is further treated in a converter, where the iron and sulphur are oxidized by blowing air through the molten matte. The end product comes out as blister copper.

It takes about 20 hours to convert a charge of 18 pots of matte to blister copper in the converter. Blister copper eventually goes to an electrolytic refinery where the gold and silver are recovered and the copper is made ready for fabrication.

That, briefly, is the cycle of copper production in the Ely district. We have skipped over a thousand details, accessory to the process, and many stages through which the ore, concentrates and matte must be checked before the final result is achieved.

Administration offices, employee recreational features, health and welfare, safety alertness throughout the entire set-up, libraries, swimming pools, playgrounds for children, and many other supplemental activities have been inaugurated by Kennecott to maintain a harmonious spirit between workers and management.

Through Kennecott and Consolidated Coppermines the Nevada people in the eastern section of the State approach the future with faith and hope in its industrial potentialities. With the present outlook for ore reserves, it is likely the two companies—Kennecott and Consolidated—will be handing out payroll checks for many years.

On this page we show a variety of activities in the Pahrump Valley, southwestern Nye County, Nevada, one of the most productive agricultural areas in the State. A new highway, affording access and egress, was completed last fall and this eliminated the semi-isolation of the ranchers who have made their homes in the valley. A big crowd was present when the new road was officially opened and there was rejoicing among the valley folk for this very important event. Pahrump Valley yields fine cotton—the only place in Nevada where this staple crop is produced. Ranchers are specializing in dairying and also in fruit and garden cultivation. Ample supplies of water are obtained from shallow wells which simplify the chores of irrigation.

Pahrump Valley is located on the westerly slope of Mount Charleston, one of the highest peaks in southern Nevada. It's altitude is recorded as 11,700 feet. The valley itself, however, is much lower, enjoying elevations of 2,600 to 2,700 feet. Las Vegas is now only 45 miles distant over the new highway, and affords a good outlet for the valley's crop production.

The Rural Electrification Administration program, which will also bring to the valley telephone service, is expected to become a reality in the not too distant future. In the meantime the ranchers generate their own domestic electricity.

Isolation Is Ended

By A New Highway

PAHRUMP VALLEY

NEVADA'S Cotton Bowl

NEV 16

THEY SNIPPED A BLUE RIBBON

And A Dream Of Many Years Came True

By DOROTHY DOROTHY, *Lazy 88 Ranch, Pahrump, Nevada*

IN PAHRUMP VALLEY, where hand-hewn arrowheads of ancient days can still be found, a new hard-surfaced highway now scenically wends its way. Sixty-two miles west of Las Vegas, as the motor car travels, this garden spot of southwestern Nevada, after many years of transportation handicaps, now looks to the future with high hopes and complete confidence. Added to the splendid producing soil, ample water supplies, fine weather for crop growing, a wide variety of products, and thrifty, industrious farmers, the new transportation asset has greatly enhanced the potential of the district which comprises an area of nearly 300 square miles.

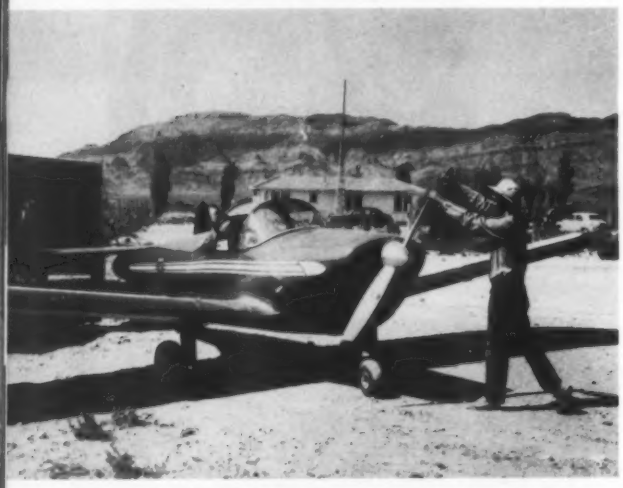
From Highway U. S. 91 out of Las Vegas Valley, across the southern end of Pahrump Valley, and on to the California-Nevada line 8 miles away, this highway brought release to an isolated area. Only the 8 miles from the old Pahrump Ranch (now known as Diablo Farms) to the California-Nevada line is yet to be surfaced. This remaining portion, when completed, will fulfill Nevada's obligations in the cross country cutoff highway from Kingman, Arizona, to Morro Bay, California.

This remaining rough, gravel, eight-mile portion takes a toll of tires on the big semitrucks hauling the cotton, hay, stock, and machinery, which depletes the profits greatly. This remaining link of road will be surfaced in the late spring of 1955, according to schedule, thereby giving Pahrump Valley the benefit of constructively using the profits now wasted on truck and passenger car tires.

The new highway, just numbered Nevada 16, is destined to become one of the main highways when the California portion of the cutoff highway is completed. It means more than a highway to Pahrump Valley. It means growth, liberty, success and an outlet to guarantee safe delivery of the perishables grown in the rich soil. This means expansion in crop acreage, food for the State, and profits for the farmer.

Hay balers for baling cotton may not be standard equipment but Pahrump Valley folks don't let that stop their progress. They also raise some mighty fine crops of youngsters as is quite apparent. The cake cutting was a joyous event when the new highway connecting the valley directly to Las Vegas was officially opened. The young lady, partly hidden by the dahlias, proves that Pahrump can raise both of high quality. Dorothy Dorothy, one of the dynamic leaders of the valley, checks the efficiency of the hay baler.

Folks seek the shade, under the "big top," to watch road opening ceremonies.



Some ranchers have their own plane for traveling to outside valley destinations.

With hard work, high hope and stubborn dedication to the land, farmers in this fertile southwestern Nevada valley are facing their responsibilities squarely as tillers of the soil, determined to wrest from nature a maximum in all agricultural produce.

Pahrump Valley now is best known for the 2,000 acres of Acala-A-442 cotton which tests with the best in the United States. Pahrump Valley is the only cotton growing district in Nevada and the only valley in the world to use an old fashioned hay baler to conserve space and enable more tonnage for the 300 mile haul to the Arvin, California gins.

The range of crops grown in Pahrump Valley includes semitropical zone plants. Many fruits are grown, especially peaches, apricots, plums, pears, pomegranates, figs, and many kinds of berries, almonds, walnuts, pecans. Pahrump Valley is one of the very few locations in the United States where pistachio nuts are grown.

The long growing season, with the warm, dry summer and mild and dry winter, always dependable sunshine percentage in summer and winter, assures growth, and successful crops of corn, milos, sorghum, sudan grass, alfalfa, and grains, and the valley is an ideal growing spot for potatoes. Six cuttings of alfalfa is not unusual.

Pahrump Valley is completely surrounded by mountains. It is located on the westerly slopes of Mount Charleston, 45 air miles "ante-over" from Las Vegas, Nevada, in the southern end of Nye County. It is now only one hour's driving time over the new hard-surfaced highway to Las Vegas 62 miles to the east, via Warner Springs.

The average yearly temperature ranges from 12 above to 110. Growing season extends from early April to November frosts.

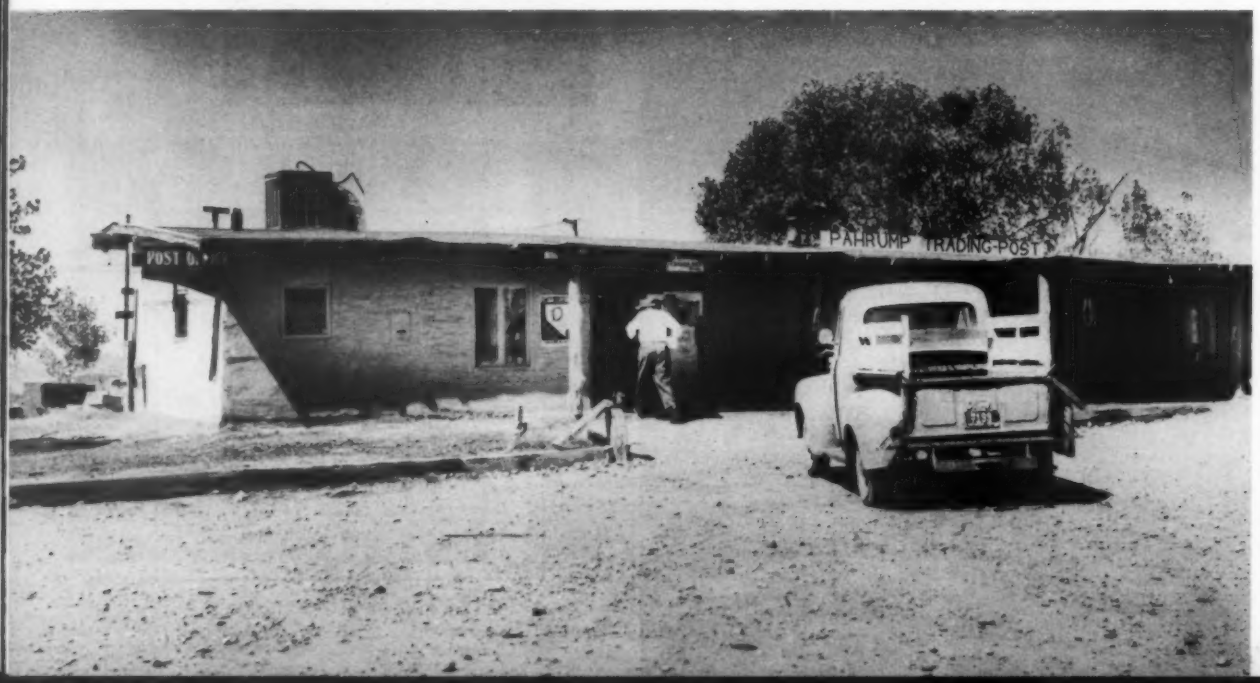
The elevation varies from 2,600 to 2,700 feet depending on south or north locations. Soil analysis is from silt to sandy, with an unbelievable depth of 80 feet in some places.

Gravity irrigation from pumped wells and artesian springs gives the guaranteed control of keeping the crops growing to maturity without having to depend upon the rainfall which is usually on the average of four inches a year.

All farming and cotton growing is done on a systematic basis, through soil tests, instead of guesswork. County agents take an active part in giving the farmers the benefit of proved experimental results.

Cotton growers in this fertile valley include the Lazy 88 Ranch, Daniels-Simkins, Brady Brothers, Diablo Farms, Mizpah and Manse Ranch.

Typically western, Pahrump Trading Post and Post Office serves valley ranchers with a variety of needed supplies.



Mechanical cotton pickers are used instead of hand pickers, one mechanical picker doing the work of 90 hand pickers.

Pahrump Valley is a dairyman's paradise. There is one modern 100-cow dairy now in operation.

With the newly opened highway Pahrump Valley, though still without telephones and public service electricity supplies, will be serving the outside markets with fresh provisions, thereby helping the economy of the State.

To prove that Pahrump Valley is ready to take her place as a dependable horn of plenty, her growth is steady and expansion sound. In 1950 with only 20 receiving mail through the "no postmaster" post office, there are now 265, with another 200 coming and going. This brings new business, and building projects.

More farming land is developed each year, resulting in 2,000 acres added to the farming total of the last two years. With the abundance of water, the potential of Pahrump is inestimable.

The Rural Electrification Administration program, which will automatically bring telephones, will become a reality in the valley in the not too distant future.

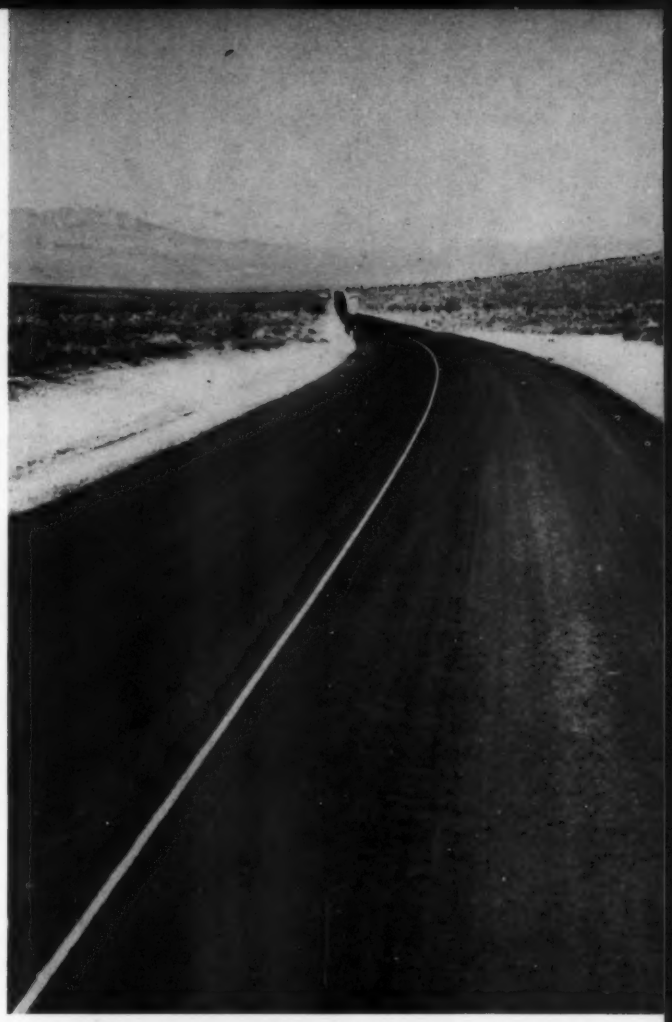
In the meantime, the farmers generate their own domestic electricity. Most of the farm houses are modern.

When the day of rural electrification arrives so that the farmers can pump water for irrigation with electric motors instead of using the D-13,000 diesel engines, Pahrump will take its place among San Joaquin, Imperial and other fertile western valleys.

Overhead in farming costs is much higher than the average person realizes. Taxes, controls, and higher overhead costs, with the lower profits, have impaired progress somewhat, as the liability is about all a farmer can tolerate without loss of freedom to continue.

But a farmer refuses to be defeated. He faces the challenge of the soil, and with courage carries on in the spirit of his Pilgrim forefathers. And, with the highway—then the electricity and telephones, the saving being passed on to the farmer, he will be given a victory he so rightly deserves.

Nevada and the nation will thereby be benefitted.



The black ribbon affords an outlet to markets for the valuable valley produce.

No celebration would be complete without a barbecue and a watermelon feast. Pahrump Valley celebrated the coming of the paved highway, Nevada 16.

Stewart School, 3 miles south of Carson City, affords educational opportunities for Indian youth of the Washoe, Paiute, Shoshone and Navajo tribes. Boys and girls receive training in a variety of subjects, including practical banking procedure. Girls are expert in the home economics classes, and the recreational life of the school is not neglected. Stewart Band, a colorful, uniformed group of Indian youth, boys and girls, make out with some really good music, and they love to parade. Big and husky footballers play the game for all it's worth.

STEWART SCHOOL

Washoes, Navajos, Paiutes and Shoshones

By JANE ATWATER, *Carson City, Nevada.*

THREE MILES southeast of Carson City is one of the busiest spots in the State—Stewart, the Indian Agency for the State of Nevada. The peaceful setting of old, white, wooden buildings and stone masonry beneath the majestic old cottonwood trees almost disavows the many activities that radiate from this attractive place. Its jurisdiction covers the entire State for a distance of 747 miles north to south and 366 miles east to west. In this area there are 16 reservations and 10 Indian colonies, all looking to Stewart for help, guidance and counsel. Some of the reservations extend beyond the state boundaries into Oregon, Idaho and Utah, all having headquarters at Stewart.

A most unusual school is provided on the premises of the Agency for students from 23 tribes. Since most of the Nevada Indian children have been absorbed by the public school system, the boarding school extends a welcoming hand to children from other states. Heading this vast and intricate community is Burton A. Ladd, Superintendent of the Nevada Agency.

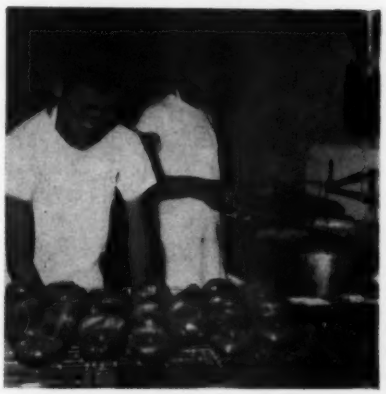
The Stewart Indian School provides two programs for its students; one for students from Nevada and the nearby states who understand and speak English, and one for the non-English speaking, overage group in the special five year program.

The regular program provides the same opportunities as any public school in the State of Nevada. The same guides and state-adopted textbooks are used in this program as are used in all public schools. There are cases in which a student transfers to a public school from Stewart of necessity, and in other cases students transfer to Stewart. Therefore it is very necessary that the programs be much the same in order that such changes are successful.

The high school curriculum at Stewart is set up in such a way that the same subjects are offered at Stewart as are offered students in the public high schools of the State. The same credits that are required of any student of a public high school for graduation are required of the graduates of Stewart.

Superintendent Burton A. Ladd.

Doughnuts from the bake shop.



(Lower right) Dormitory rooms are comfortable and are centers of social activity.
(Below) Girls do practical hospital work and become trained nurses.

Potato harvesting (top), the school cafeteria (center), and the carpenter shop for boys (bottom), comprise the illustrations on the left of this page. The picture at the top right shows the type of residences on the school grounds provided for employees other than the students, and the large auditorium, as shown at the bottom, affords ample room for general assemblies when occasion necessitates. The children are encouraged to take weekend and summertime jobs to supplement their training as well as to provide the students with funds for any extras which may be needed.

In the school the students, about half of whom are Navajos from Arizona and New Mexico, are given a five-year program during which they learn to speak English, read, write, spell and do arithmetic. They are thoroughly schooled in hygiene for many of these children come from lands where superstition and tradition have lead to bad health. Some of the youngsters have never seen a bathroom before coming to Stewart. Beside the basic academic course, each student is trained for a vocation he can follow when it is time for him to make a living. In each classroom there is an interpreter to explain the teacher's words to the pupils.

In the campus hospital, hundreds of children are on a vitamin program, which, combined with the ample, balanced diet they have, tends to add from 10 to 30 pounds per student the first year. Their eyesight is also improved by the vitamin diet. In the clinic are Indian girls learning to be nurses' aides. When they graduate they will be capable of hospital work and some of the graduates have been placed in hospitals in Reno, Carson City and California. Others do private nursing work, or even if they go home to be married they will be better mothers because of their training at Stewart.

In the general elementary shops the boys work with metal, wood, leather and concrete. The older boys learn carpentry, plumbing, housepainting, and to be filling station attendants and mechanics, and often have weekend and summertime jobs as apprentices to local contractors. Another course for boys is baking. The small, immaculate bakery run entirely by that class, under adult supervision, turns out 240 loaves of bread, 1,280 rolls, 60 cakes and 110 pies a day for the school dining room. Seven hundred doughnuts a week come from the classroom's deep fryer. Upon graduation these boys are ready to take their places as apprentice bakers.

The domestic science course for girls teaches them to prepare balanced meals and to cook with gas, electricity and kerosene. The use

of automatic washing machines, refrigerators and kitchen appliances are a part of their training. In sewing they learn to make most of their own clothes. The older girls who have chosen home service work as their vocation practice keeping house in small cottages. They prepare and serve delicious meals to one another and do their sewing under typical home conditions. Positions in private homes are found for the girls who do not choose to return to the reservations.

Agriculture plays a big part in the educational program, with a farm six miles from Stewart where the children can have actual farm training. A herd of over 200 beef cattle and from 20 to 30 registered Herefords are pastured there and supply beef for the school kitchen. Some of the older boys are working with members of the Department of Resources and Land Operations to build dams to store the winter runoff from the surrounding hills for summer irrigation of the school's farm lands. These boys, under capable hands, are learning how to operate and repair heavy equipment.

The students enjoy a wide variety of recreation. Stewart's football and basketball teams belong to the Western Nevada "A" Conference and play a regular schedule of games. Track and baseball are other sports in which the boys participate. The boys and girls also have their own chapters of the 4-H Club. Holidays and weekends find the school a beehive of social activities, such as square and ballroom dances and parties. Graduation, naturally, is the highlight of the year with the election of the prom king and queen. The girls are as dainty and attractive as their fair-skinned sisters in their formal gowns, and the boys are as proud and handsome in their suits as any other graduating class might be, for good grooming is stressed as a part of hygiene. In 1896 the students organized a band that helped the old time Indians to believe that perhaps some good could come from the white man's ways. Since then the band, in its smart red and white uniforms, has been a part of almost all of Nevada's celebrations.

Sewing classes for the girls give proper training for "do it yourself" dressmaking.

An air view of Stewart Indian School, Nevada. Visitors are welcome. At the Wa-Pa-Shone Trading Post arts and crafts materials can be obtained.

Looking down from one of the upper towers toward the parking circle at Reno Ski Bowl. Ski lift service is available during winter and summer.

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